DECLARATION

We hereby **NDAYISHIMIYE Jean Claude and NZABAHERAHEZA Jean Claude** declare that we carried out the work reported in this report in the Department of INFORMATION TECHNOLOGY IPRC TUMBA, under the supervision of HARERIMANA Sophonie. We solemnly declare that to the best of our knowledge, no part of this report has been submitted here or elsewhere in a previous application for award of an academic qualification. All sources of knowledge used have been duly acknowledged.

NDAYISHIMIYE Jean Claude: 16RP01166 Signature ……..

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APPROVAL

This is to certify that the project titled **"Dairy Management System"** carried out by **NZABAHERAHEZA Jean Claude and NDAYISHIMIYE Jean Claude** has been read, checked and approved for meeting part of the requirements and regulations governing the award of the Advanced Diploma of **Information Technology** of IPRC Tumba, Rwanda.

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DEDICATION

We take this opportunity to dedicate our work first of all to Almighty God, to our beloved parents, colleagues and friends who tirelessly supported us during our project period. Thanks for your care, love and support. We also dedicate this work to our fellow classmates we used to work together who gave us the opportunity to increase the skills especially in information technology courses. Great thanks to our supervisor **Mr. HARERIMANA Sophonie** for his great support and hard working with us to successfully complete our work.

ACKNOWLEDGEMENT

First of all, we would like to express our gratitude to Almighty God to enabling us to complete this report on “Dairy Management System”. We genuinely articulate our appreciation and thank to each and every one who contributed to the success of this final year project who gave us the opportunity to conduct our project. We also express our thankfulness to IPRC TUMBA for offering an impressive range of academics and professional courses and also a favorable leaning environment. Our appreciations also go to our entire project supervisor Mr. HARERIMANA Sophonie for his greatness supervision, support, same advice, information, recommendation and encouragement he offered throughout this project period for further development of employable and professional skills.

May God bless you all!!

ABSTRACT

The aim of this research was to design the DAIRY MANAGEMENET SYSTEM,

Application will help workers of Mukamira Dairy to measure. Input milk from milk collector and show automatically output product (ikivuguto, Inshyushu, yoghourt, cheese).

Application in term of Mukamira Dairy manager to get report easily entry milk from farmers, output products, out of date products, the value of products in terms of money, and report of sold products.

A web based application which will link the farmers and Mukamira Dairy; this system will facilitate the farmers to sell their milk easily and to know quantity of milk sold and the amount of money to be paid, The dairy will benefit the analysis and calculation managed by this system while providing the quantity of milk collected and terms of production such as distribution, quality and packaging.

This system will help customers view available product and buying online, Customers who want to buy large quantity of milk (products) he/she can pay through bank account. System will help data recording, data manipulation, data reporting to dairy works and manager, to count out of date product of dairy.

Application system will promote the quick service; the system provides information to use while collecting the milk, by using PHP, MYSQL database, we can make a dynamic web application, which can handle those issues.

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LIST OF ABBREVIATIONS AND SYMBOLS

IPRC: Integrated Polytechnic Regional College

RP: Rwanda Polytechnic

ICT: Information and Communication Technology.

IT: Information Technology

OS: Operating System

HOD: Head of Department

API: Application Programming Interface

LTD: Limited

XAMPP: Cross-Platform (X), Apache MySQL PHP and Perl

HTML: Hypertext Markup Language

PHP: Hypertext Preprocessor

HTTP: Hyper Text Transfer Protocol

RAD: Rapid Application Development

LAMP: Linux, Apache, MySQL, and PHP

MYSQL: My Structured Query Language

DBMS: Database Management System

RA&D: Requirement Analysis and Definition

MB: Mega Byte

GB: Giga Byte

HDD: Hard disk

RAM: Random Access Memory

CHAPTER I .GENERAL INTRODUCTION

1.1 Introduction

All over the world for many countries, we want to improve or promoting information technology using new technology, which uses a high capacity and multi capacity tools such as computer and its devices but it is used by human to realize and to do many functions in various domain of his life.

Rwanda is stilled in those countries and in the world general has not remained insensible to the opportunism provided by that technology. It has tried to computerize some domains according to computers and internet functionaries.

Our country Rwanda has a long way to attain success in this area. Web Application development and the use of automated system network system development, the need to share resources within the country and with the outside world, is what among other things that hold largely the certificate of measure of development in the Rwandan society.

Given the typical nature of information technology evolving day by day, there are wide rangers of activities that must be executed to implement ICT strategic activities presented as interactive and online information.

1.2 Background of the study

Mukamira Dairy located in Western Province in Nyabihu district. The dairy was dogged by misappropriation cases caused by some managers of the project.

The 12th Leadership retreat came out with the resolution of listing jeopardized and stalled projects to enable investigations, identify and punish culprits. Mrs. Mirembe Alphonsine the Director of Cabinet in the Prime Minister's Office told the press after the12th leadership Retreat that stalling of projects was not related to lack of financial means.

Some farmers of Mukamira sector had started expressing worries over the stalled dairy project in which they have great hopes of buying their products.

"The dairy has been under construction for five years. We would, by now, have overcome the challenges of cheaply selling our milk, "said Mukamasabo Rose.

1.3 Problem statement

The existing system uses sheet paper to store data and it takes long time.

The main problem, Dairy Data Record, Manipulation, Advertise, buy milk, sell products and Report Problem so due to this main problem brings a lot of effect like loss of data, lack of supplier and client, many workers , products Expiration, drink bad milk, difficult to find out report.

On supplier side, they face the problem Dairy is too far and bad condition in transportation, difficult to supply, on data management side face Record, Out of Date and Report Problem

On client side, they face this problem to get news on Available products and buy is to hard and payment is not easy.

1.4 Scope of the project

In this project we will focus on the following functions services:

- System will facilitate dairy to know entry milk and produce report automatically of products like ikivuguto, inshyushu ,yoghurt, cheese
- .Creating an interface with a way in which the user can enter his/her own information form.
- Farmer can be registered in dairy system with the milk his/her brings
- A way in which the user can choose a product according to the price.
- The system that can generate some information according to user.
- The system that help the dairy employee to manage milk and other products from milk on dairy web application.

1.5 Objectives

The objectives of this system are consists: the general objectives and specific objectives.

1.6 General Objective

The general objective of this web application is to analyze the problems of Rwandan people commit when he/she want a to buy product from milk wherever they are and help the manager to organize ,prepare, packing, and storing in good condition from the manual work which is difficult to store long time.

1.6.1 Specific objective

- Application will help workers of Mukamira Dairy to measure input milk from milk collector and show automatically output product (ikivuguto, inshyushu, yoghourt, cheese).
- Application will help the Manager of dairy to get report easily entry milk from farmers, output products, out of date products, the value of products in terms of money, and report of sold products.
- This application will help Mukamira Dairy Ltd to advertise and to sell products.
- This system will show or display the products which are available in store.
- System will help farmers to sell their milk in good way and they will be paid in certain period of time.
- This system will help the Mukamira Dairy to use few employees due to manual system become computerized system.

1.7 Project interest

The development of this project will focus on these following interests:

The implementation of this web application "DAIRY MANAGEMENT SYSTEM" will link the farmer, client and dairy to exchange products and milk.

1.8 Organization of the project

The work is divided and organized in six chapters:

- Chapter one deals with the general introduction of the project.
- Chapter two is merely the literature review
- Chapter three is the Methodology used.
- Chapter four includes system analysis and design of the software.
- The fifth chapter is system implementation.
- The sixth chapter give the general conclusion as well as some recommendations.

CHAPTER II. LITERATURE REVIEW

2.1 Introduction

This chapter explains related theoretical work or references used to develop the "Dairy management system "and a background of the web application. It also expands on technologies to be used with a view of providing an overview for the concept of the system design.

2.2 Introduction to the web application

Therefore, us, as researcher, we committed to study information technology application in Dairy Management System Web Application. It is crucial issue; we have decided to orient our project research in developing web application that will help the administrator for managing various activities in the DAIRY and it will used for managing the DAIRY information, it will also manage client information, milk details and expired date, payment to client and easy buying and pay online to MUKAMIRA DAIRY LTD, it will keep the number of client in the buying every day and availability of the milk, yoghourt, cheese.

2.3. Definition of Terms

- **Milk is** an opaque white fluid rich in fat and protein, secreted by female mammals for the nourishment of their young.
- **Dairy**

  Dairy is a building or room for the processing, storage, and distribution of milk and milk products.
- **Farmer**

  A farmer is someone who works under the umbrella of agriculture, producing a variety of food products for human and animal consumption. There are several kinds of farmers ranging from farmers who raise animals to farmers who grow crops.
- **Client**

A client is somebody who pays for a product or service

- **Product**

In marketing, a product is an object or system made available for consumer use; it is anything that can be offered to a market to satisfy the desire or need of a customer. In retailing, products are often referred to as

merchandise, and in manufacturing, products are bought as raw materials and then sold as finished goods. A service is also regarded to as a type of product.

- **Cheese**

  Cheese is a dairy product derived from milk that is produced in a wide range of flavors, textures, and forms by coagulation of the milk protein casein.

- **Yogurt**

  Yogurt is a popular dairy product that's made by the bacterial fermentation of milk. The bacteria used to make yogurt are called "yogurt cultures," which ferment lactose, the natural sugar found in milk. [1]

2.4 Other Relatively Application

Milk Market System

The "Milk Market" is an electronic information service designed to promote trade by bringing buyers and sellers (suppliers) together using the Internet, operated by FarmWorld.com and the Cooks mill Net Systems Network they emphasis on buying and selling only and they don't care about the production .

VAQUITEC system

Vaquitec is a dairy and beef cattle farm management software done by Màrquez, Xavithat which will help you optimize the performance of your farm and increase your productivity. Vaquitec gives you decision-making tools with fast, easy data entry, and flexible yet powerful reporting. Available for Web, Desktop, and Mobile platforms. But that's just scratching the surface. Here's what else developed in Agritec North America Office.

This system it's operate on farmer and data entry only ,does not deal with the step of production. [2]

Housing System, Milk Production, and Zero-Grazing Effects on Lameness and Leg Injury in Dairy Cows

The aim of this study was to assess the effect of grazing (G) vs. zero-grazing (ZG), level of milk production, and quality and type of housing system [free stalls(FS) and straw yards (SY)] on the prevalence of lameness and leg injuries in dairy cows this research done by Haskell MJ1, Rennie LJ. Observations were made on 37

commercial dairy farms across Great Britain. A single visit of 5 d duration was made to each farm. During this visit, lameness scores and the incidence of swellings, rubs, and injuries to hocks and knees were recorded on all the peak- ormid-lactation cows. Aspects of the quality of housing and management that were likely to affect foot and leg health were recorded. There were more lame cows on ZG farms (39 ± 0.02%) than on grazing (G) farms (15±0.01%), and lameness scores were higher on FSfarms compared with SYfarms(0.25 ± 0.01 vs. 0.05 ± 0.01). Cows on SY farms had fewer hock and knee injuries compared with FS farms. The frequency of knee swellings was higher on ZG farms (0.31 ± 0.02) than on G farms (0.15 ± 0.01). Aspects of the free-stall design affected foot and leg health. The number of hock swellings increased with increasing stall gradient (0.16 ± 0.01 with no slope vs. 0.39 ± 0.02 at a0 to 1.5%slope). There was an interaction between the length of the free-stall lunging space and the hip width of the cow, indicating that the incidence of lameness is generally highest on farms with small free stalls and heavy cows. High levels of milk production did not affect lameness or leg injury. The results indicate that housing cows throughout the year potentially has a detrimental effect on foot and leg health. However, good free-stall design may reduce lameness and leg lesions. [3]

Dairy Management System

The Dairy Management Software Program and Dairy Management System allows easy access, to key information on each animal, or the whole dairy herd thereby fostering an increase in efficiency and profitability. The Dairy Management Software was developed in consultation with the leading Breed Societies, as well as dairy consultants, vets and farmers. The electronic transfer of information between you and your Breed Society is very easy, time spent at the computer is at a minimum and useful information is available for consultants to assist the farmer, in important decision making about the dairy.

Main Features:

- Cow Information Cards - Showing lifetime history of AI's, production, calvings, mastitis, other medical and weight recordings. Production graphs as well as weight recording graphs are available for individual animals as well as the entire dairy herd.
- Milk Recording – official or unofficial milk recording facility. Electronic transfer of milk recordings to laboratories for testing and automated import of results highlighting problem dairy cows with high somatic cell counts together with their somatic cell count history and mastitis problems over their lifetime.

- The system has been linked to the major electronic milking machines thus saving having to recapture milk into the dairy system. The data path is bi-directional ie the latest data will either be sent or received from Plan-A-Head Dairy Management System to the milking machine software. [4]

Automatic Quality Information Management System of Dairy

India is now emerging as a major growing in the international dairy market. With the current liberalization of India economy, it has opened a wide field for entrepreneurs from other countries to participate in development of Indian dairy industry. The dairy industry, which is the second largest industry of India, employs millions of persons in our country. There is tremendous scope of growth in dairy industry and we can bring white revolution in our country if this industry is properly organized. This system recurring to information of enterprises puts forward technical proposal of dairy business and evaluation arithmetic of the quality information management system. The result of the study shows that the digital information management system is an effective way to improve the level of the quality management in the dairy business. The multifunctional business management, cross-sector collaboration, more automated information collection and analysis will be the development direction of quality management information of dairy. [5]

Free Dairy Management System

This project deals with the management of milk it deals with the purchase and sale of milk by making records in the database. The first step in the project is to add a staff member to the database the make purchase by specifying the milk type and rates with quantity, these added values will be displayed in the stock section and sales made in the transaction section. All create; read, update and delete operations are supported in this project for complete curd representation.

Technologies used javafx, MySQL. [6]

CHAPTER III. RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains methods, which are used to collect data during research and software tools.

3.2 Methodology and Techniques of Research used

The satisfactory result obtaining is motivated by the good choice of methods and techniques used for the collection of data. For making that, in this project we are going to put clarification, methods and techniques that we used to observe the reality and to reach objectives that we fixed ourselves.

3.2.1 Data Collection

Data collection is the process of gathering and measuring information on targeted variables in an established system, which then enables one to answer relevant questions and evaluate outcomes. In other words is a component of research in all fields of study including physical and social sciences, humanities, and business. While methods vary by discipline, the emphasis on ensuring accurate and honest collection remains the same. The goal for all data collection is to capture quality evidence that allows analysis to lead to the formulation of convincing and credible answers to the questions that have been posed.

3.2.2 Technique of data collection

3.2.2.1 Observation method

Observation is visual study of something or someone in order to gain information. This allows us to make informed decisions and to get the facts information and allowances based on what we have been studied. Observation is a basic and important method used to collect the real data in our research methodology of making a web based application of dairy management system. We did it by collecting data about selling and buying services directly observing them at work ,we saw the products and its price ,we have seen all steps followed when milk are processed until it's become products.

3.2.2.2 Interview techniques

An interview is a technique used when we have made observation to collect a variety of information from dairy related to buying and selling, storing, monitoring milk (products of milk) from the entrance date up to the exit date from the dairy while we are collecting data using interview we have asked the interviewee several question those question are mentioned in appendix page, the interviewee was JOSEPH RUGENZA KWIZERA who is in charge of selling Mukamira Dairy products, we have asked also the farmers and clients.

3.3 Software development models

For developing the Dairy Management System, our group will use ‘waterfall model'. The Waterfall Model was the first Process Model to be introduced. It is also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases. And development process is divided into separate phases which are cascaded to each other. After the implementation and integration phases are complete, the software product is tested from testing team and debugged; any faults introduced in earlier phases are removed here. Then the software product is installed, and later maintained to introduce new functionality and remove bugs which occur.

Those phases are written below:

- Feasibility
- Requirement analysis and specification
- Designing
- Coding and testing
- Integration and System testing
- maintenance

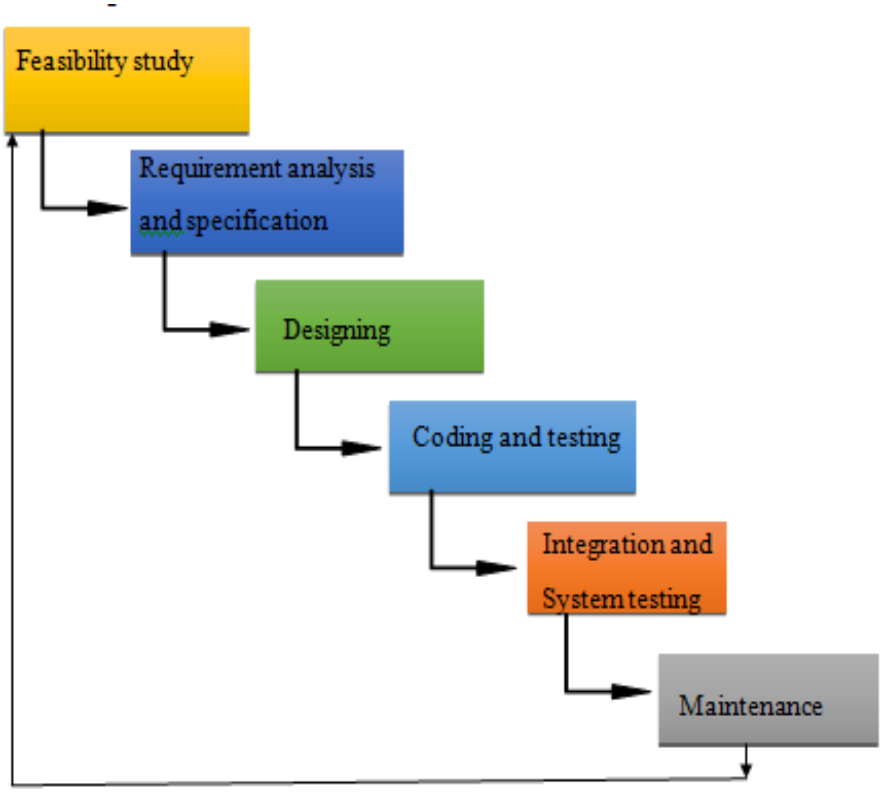


Figure 1: water fall model

3.4 System requirements

System requirements are categorized into two main parts: software and hardware requirement these requirements are here to help us developing web application which and the environment we will use while we are developing our web application.

3.4.1. Hardware requirement

In this web application of Dairy Management System, we will use the following hardware equipment:

Computer

- CPU: Pentium III processor or Higher processor
- RAM: 125 MB or plus
- HDD: 20 GB
- Keyboard, Monitor, Mouse, Printer

3.4.2 Software required

- Operating system: Microsoft Windows7, etc…
- Browser: Mozilla Firefox, Internet explorer, Netscape Navigator, etc.
- Web server: Apache service
- Database package: MySQL
- Front End tools: Sublime editor, HTML editor, PHP editor, Java editor and Hex Viewer for Windows. While it can serve as a good Notepad replacement, it also offers many powerful features for Web page authors and programmers.

3.4.3 PHP, Apache, Mysql, Xampp

PHP is a general-purpose scripting language designed to fill the gap between server sides includes and Perl intended largely for the web environment. PHP generally runs on a web server.

Apache is primarily used to serve both static content and dynamic Web pages on the World Wide Web. Many web applications are designed expecting the environment and features that Apache provides. Apache is the web server component of the popular LAMP web server application stack, alongside MySQL, and the PHP /Perl /Python programming languages. Apache is used for many other tasks where content needs to be made available in a secure and reliable way.

Mosul (pronounced “my S-Q-L" is a multithreaded, multi-user SQL database management system (DBMS). The basic program runs as a server providing multiuser access to a number of databases

Xampp is a free and open source cross-platform web server solution stack package, consisting mainly of the Apache HTTP Server, MySQL database, and interpreters for scripts written in the PHP and Perl programming languages. Many people know from their own experience that it is not easy to install an Apache web server and it gets harder if you want to add MySQL, PHP and Perl. XAMPP is an easy to install Apache distribution containing MySQL, PHP and Perl. XAMPP is very easy to install and to use just download, extract, and start.

CHAPTER IV: SYSTEM ANALYSIS AND DESIGN

4.1 Introduction

The system analysis and design is used to describe the topic towards the main goal. The purpose of the design phase is to plan a solution to overcome the problem of DAIRY customers. This chapter presents results of this project in relation to the project goal. The main goal of the project is to develop a based system that will allow customers to get service very quickly.

4.2 System design

System design is process of designing internal structure of the target system that satisfies the requirement defined in requirement analysis and definition (RA&D) process.

4.3 Software Development Process Methodologies

The software development process focus on the phase of activities directly related to production of the software, for example, design, coding, and testing.

4.4 System analysis

Any system designer will first analyze the existing system to point out the problems which are the system requirements creating need for a new one. The system in this study has been catered for in the research phase during which the designer looked at how the existing operates and its shortcomings.

Here the target is to reduce time of receiving client which would eliminate the existing system by replacing it with a database recording system and then display the information to users using appropriate programming languages and web server in this case Easy PHP, HTML, and Apache service respectively.

4.5 Existing System

When we Analysis the Manage about the working of dairy then we face that they working with manual so the manual system brings many problems, Keep milk in good condition was difficult and not easy to find out all record, it requires more critical work when the suppliers brings milk it take long time when their record are recorded on the paper. The farmers and suppliers bring milk themselves to dairy.

The clients went to dairy themselves to buy the prepare milk and other products produced.

Due to the use of manual system to find out the information of the products that are out of date was big issue and another issue we find is to advertise their products was difficult.

In order to get report the employees in Mukamira dairy they have to use paper system they need to write everything on paper.

4.6 The new system

The old system that they use for giving services to the clients we have found that the system used is not efficient and do not correspond to the time of today especially our customer.

That's why this new system can be a good way to give good services to the clients for less time and cost for both sides. The following explain the details about the system functionality and different links and how they should be used by both sides. Due to those issues mentioned above we have decide to move from paper system to computerized system, this is computer system will help the manager of Mukamira dairy to get report easily wherever he is.

We decide to develop a web based application which will link the farmers and Mukamira Dairy; this system will facilitate the farmers to sell their milk easily and to know quantity of milk sold and the amount of money to be paid, The dairy will benefit the analysis and calculation managed by this system while providing the quantity of milk collected and terms of production such as distribution, quality and packaging.

This system will help customers view available product and buying online, Customers who want to buy large quantity of milk (products) he/she can pay through bank account and then upload bank slip in system.

Application system will promote the quick service

4.6 Design

4.6.1 Design overview

The purpose of the design phase is to plan a solution of the problem specified by the requirements document. This phase is the first step in moving from the problem domain to the solution domain. In other

words, starting with what is needed; design takes us towards satisfying the needs. The design of a system is the most critical factor affecting the quality of the software. It has impact on the late phases as well as testing and maintenance of the software.

4.6.2 Problem Tree

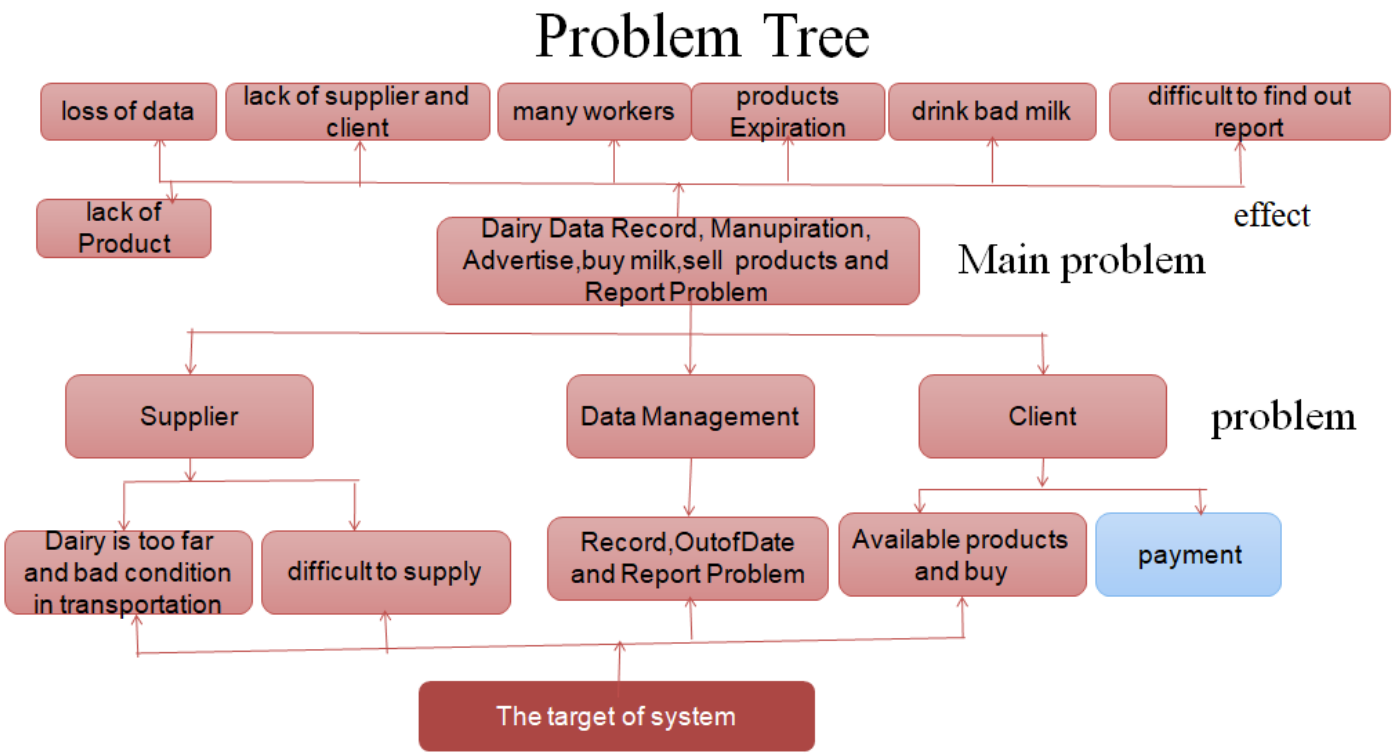


Figure 2:problem tree

4.6.3 Use case diagram for new system

Use case diagram is UML diagram which shows some business or software system, its external users (called actors), and a set of actions (called use cases) that users of the system should or can perform while using the system. Use case diagrams are used to describe functionality of a system from the point of view of external users. Use case diagrams consist of actors, use cases and their relationships. The diagram is used to model the system/subsystem of an application. A single use case diagram captures a particular functionality of a system.

Use case diagram

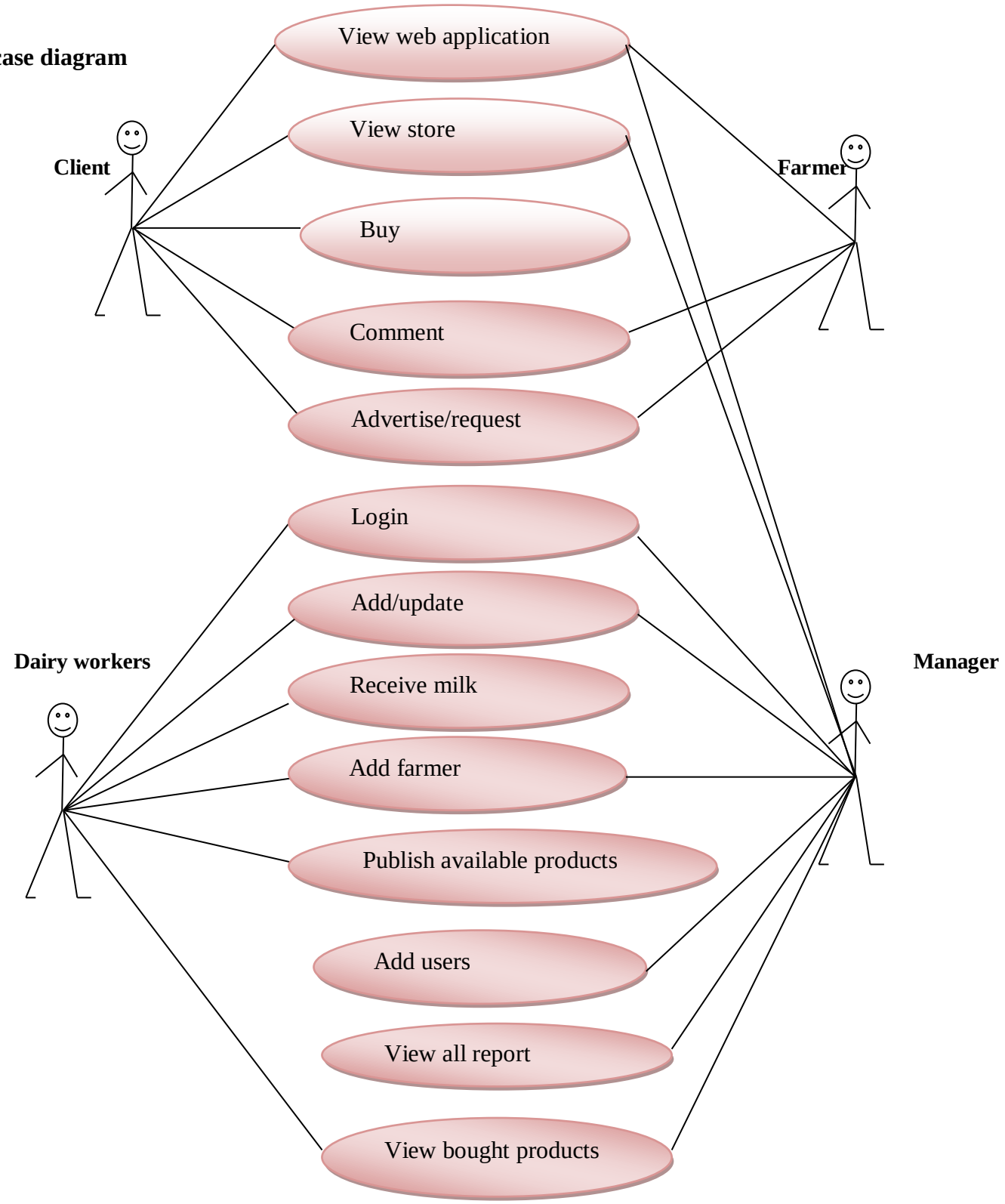
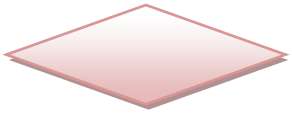


Figure 3 : Use case diagram

4.6.4 Entity Relationship Diagram (ERD)

ERD is network model that describes stored data of a system at a high level of abstraction. For system analysis, ERD has a major benefit: it highlights the relationship between data stores on DFD which would otherwise only be seen in the specification process.

The components of an ERD include:

- Entity :represented in rectangle 
- Attribute :represented in ellipse 
- Relationship :represented in diamond 
- Link or movement

An entity is a thing or "objects" in the real world that is distinguishable from other objects
Attributes are the characteristics of the entity displayed by fields or columns of a table.
Relationship shows connections among the system's entities

There are three major types of relationship used in ERDs:

- One to one relationship (1-1)
- One to many relationship (1-n)
- Many to many relationship (n-n)

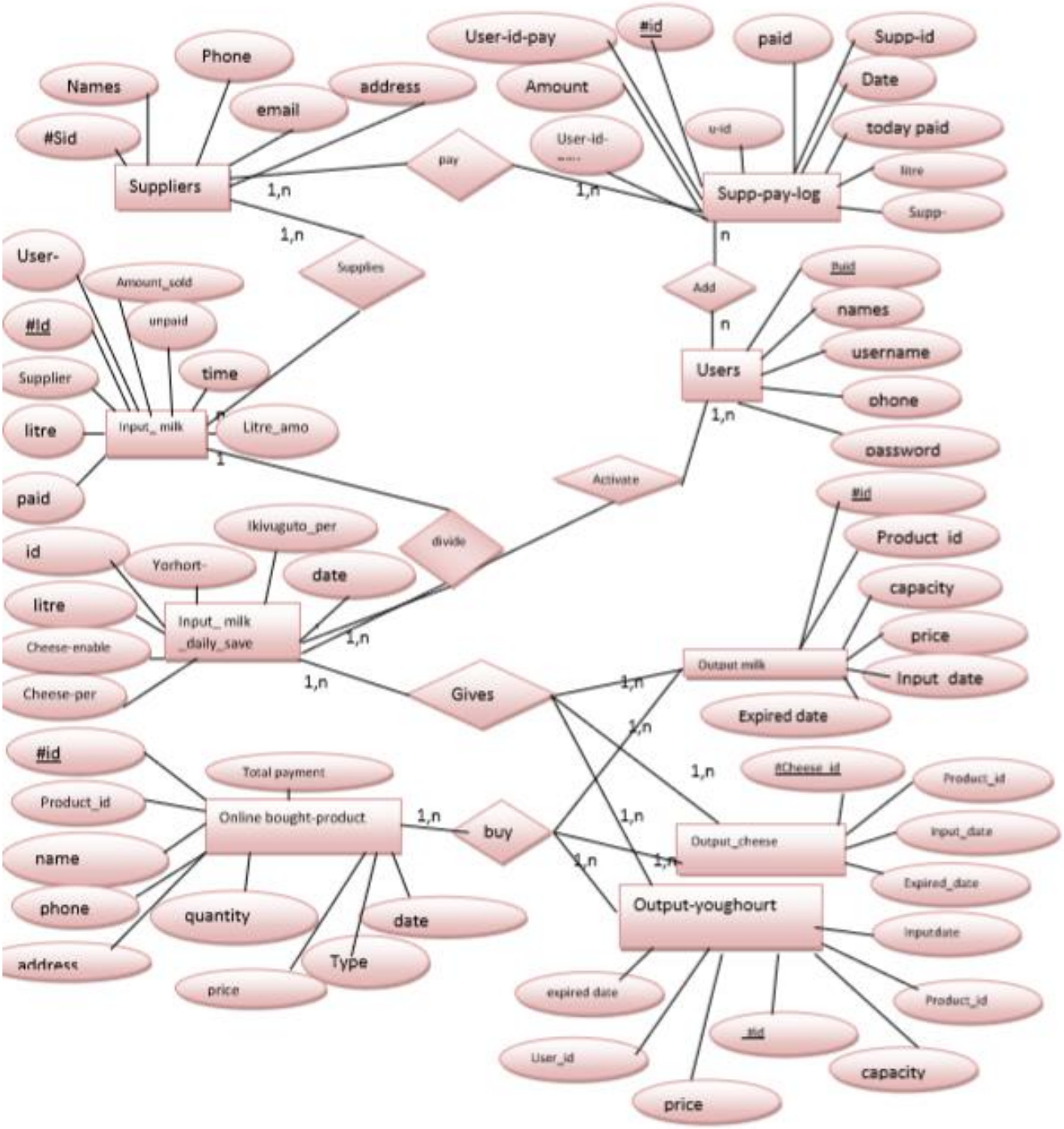


Figure 3: Entity Relationship Diagram

4.6.5 Functional Diagram

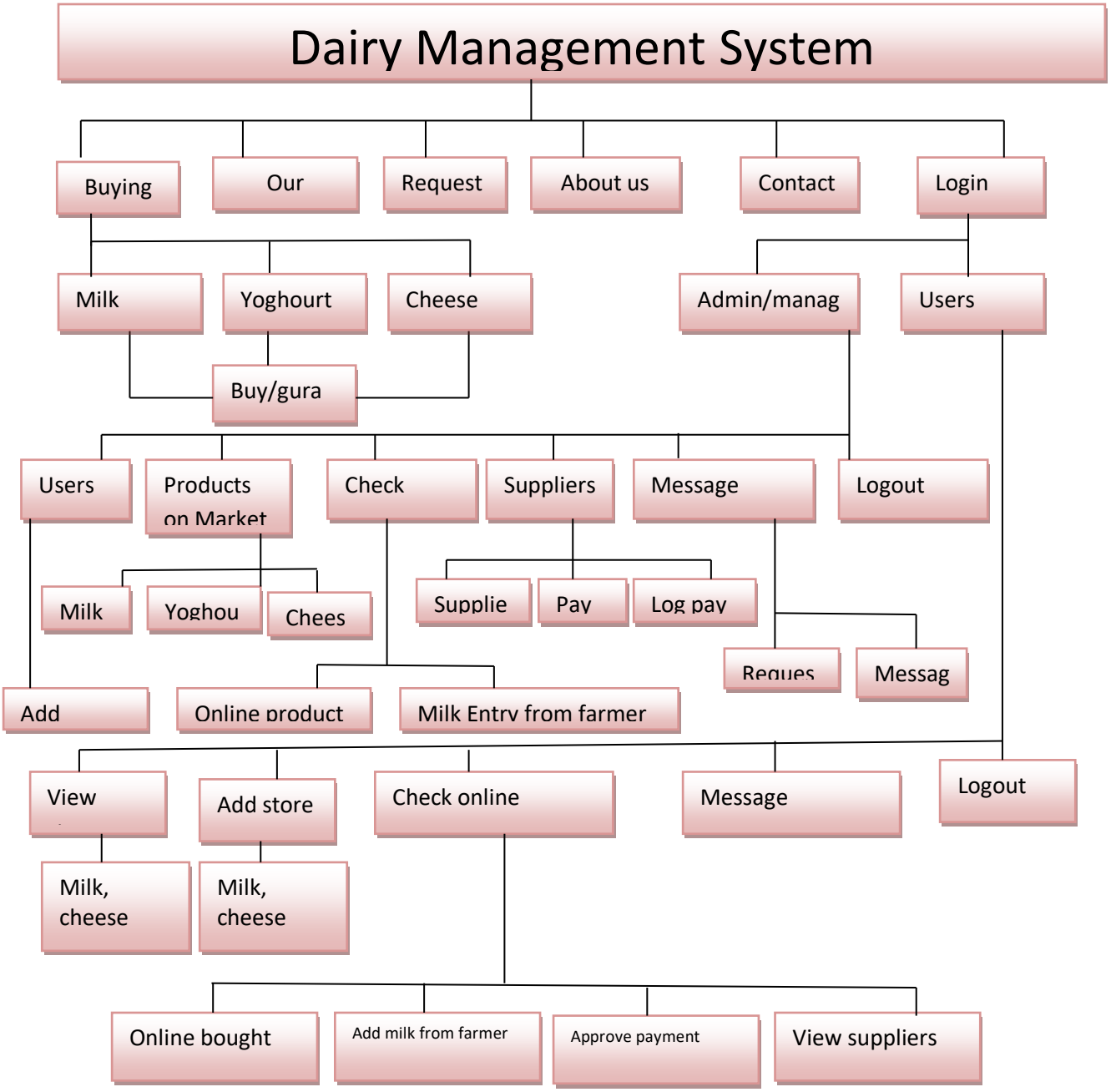


Figure 4: functional diagram

4.6 Data Dictionary

Supplier log table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id	int(11)			No	*None*		AUTO_INCREMENT
2	supp_id	int(11)			No	*None*		
3	supp_name	varchar(30)	latin1_swedish_ci		No	*None*		
4	u_id	varchar(4)	latin1_swedish_ci		No	*None*		
5	litre	varchar(8)	latin1_swedish_ci		No	*None*		
6	amount	varchar(10)	latin1_swedish_ci		No	*None*		
7	paid	varchar(8)	latin1_swedish_ci		No	*None*		
8	todaypaid	varchar(8)	latin1_swedish_ci		No	*None*		
9	date	datetime			No	CURRENT_TIMESTAMP		
10	payment_success	varchar(20)	latin1_swedish_ci		No	ntarishurwa		
11	user_id_pay	int(3)			No	*None*		

Table 1: supplier log

Request table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	rid	int(11)			No	*None*		AUTO_INCREMENT
2	name	varchar(49)	latin1_swedish_ci		No	*None*		
3	phone	varchar(13)	latin1_swedish_ci		No	*None*		
4	location	varchar(30)	latin1_swedish_ci		No	*None*		
5	request	text	latin1_swedish_ci		No	*None*		

Table 2: Request table

Product table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	pid	int(11)			No	*None*		AUTO_INCREMENT
2	type	varchar(40)	latin1_swedish_ci		No	*None*		

Table 3: Product table

Output milk 1 table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	user_id	int(3)			No	*None*		
2	id	int(3)			No	*None*		AUTO_INCREMENT
3	product_id	varchar(30)	latin1_swedish_ci		No	*None*		
4	milk_type	varchar(30)	latin1_swedish_ci		No	*None*		
5	capacity	int(5)			No	*None*		
6	price	int(6)			No	*None*		
7	input_date	date			No	*None*		
8	expired_date	date			No	*None*		
9	package	int(15)			No	*None*		
10	pack	varchar(3)	latin1_swedish_ci		No	*None*		

Table 4: Output milk

Message table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	mid	int(11)			No	*None*		AUTO_INCREMENT
2	name	varchar(40)	latin1_swedish_ci		No	*None*		
3	phone	varchar(13)	latin1_swedish_ci		No	*None*		
4	email	varchar(30)	latin1_swedish_ci		No	*None*		
5	address	varchar(25)	latin1_swedish_ci		No	*None*		
6	message	text	latin1_swedish_ci		No	*None*		

Table 5: Message table

Online bought product table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id	int(5)			No	None		AUTO_INCREMENT
2	p_id	int(5)			No	None	product id	
3	names	varchar(30)	latin1_swedish_ci		No	None		
4	phone	varchar(13)	latin1_swedish_ci		No	None		
5	mail	varchar(30)	latin1_swedish_ci		No	None		
6	address	varchar(40)	latin1_swedish_ci		No	None		
7	type	varchar(15)	latin1_swedish_ci		No	None		
8	quantity	int(5)			No	None		
9	price	int(5)			No	None		
10	total_payment	int(5)			No	None		
11	date	date			No	None		

Table 6: Online bought product table

Entry milk table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	user_id	int(11)			No	None		
2	id	int(11)			No	None		AUTO_INCREMENT
3	supplies_id	int(11)			No	None		
4	litre	float			No	None		
5	litre_amount	float			No	None		
6	amount_sold	float			No	None		
7	paid	float			No	None		
8	unpaid	float			No	None		

Table 7: Entry milk table

Distributor center table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id	int(11)			No	*None*		AUTO_INCREMENT
2	distributor_name	varchar(40)	latin1_swedish_ci		No	*None*		
3	work_name	varchar(50)	latin1_swedish_ci		No	*None*		
4	district	varchar(20)	latin1_swedish_ci		No	*None*		

Table 8: Distributor center table

Distributor center table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id	int(11)			No	*None*		AUTO_INCREMENT
2	collector_name	varchar(40)	latin1_swedish_ci		No	*None*		
3	location	varchar(40)	latin1_swedish_ci		No	*None*		

Table 9: Distributor center table

Users table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	uid	int(11)			No	*None*		AUTO_INCREMENT
2	names	varchar(40)	latin1_swedish_ci		No	*None*		
3	username	varchar(40)	latin1_swedish_ci		No	*None*		
4	phone	varchar(13)	latin1_swedish_ci		No	*None*		
5	mail	varchar(40)	latin1_swedish_ci		No	*None*		
6	password	varchar(30)	latin1_swedish_ci		No	*None*		
7	type	varchar(15)	latin1_swedish_ci		No	*None*		

Table 10: Users table

CHAPTER V: SYSTEM IMPLEMENTATION

5.1 Introduction

This chapter shows output of the project and its code used in the project. Under this chapter, you can see the testing process with the tool used in testing process

5.1.1 Screen Shoot of the project

5.1.2 Homepage

Homepage is the introductory page of a website, typically serving as a table of contents for the site

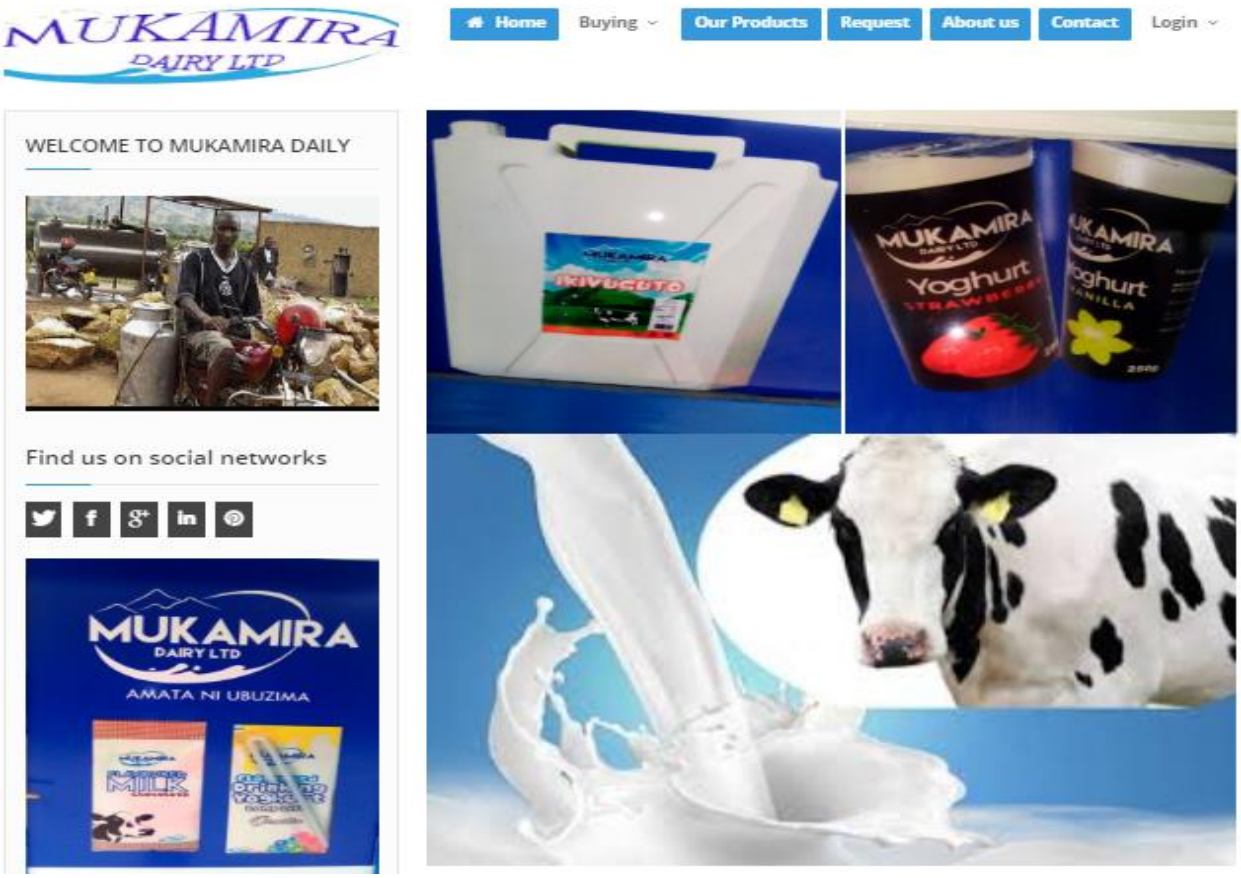


Figure 4: home page

5.1.3 Add Milk Form

This form will help the user to add milk in store from farmers

Figure 5: add milk form

5.1.4 Activation from supplier

This activation form will help the manager to generate the needed products.

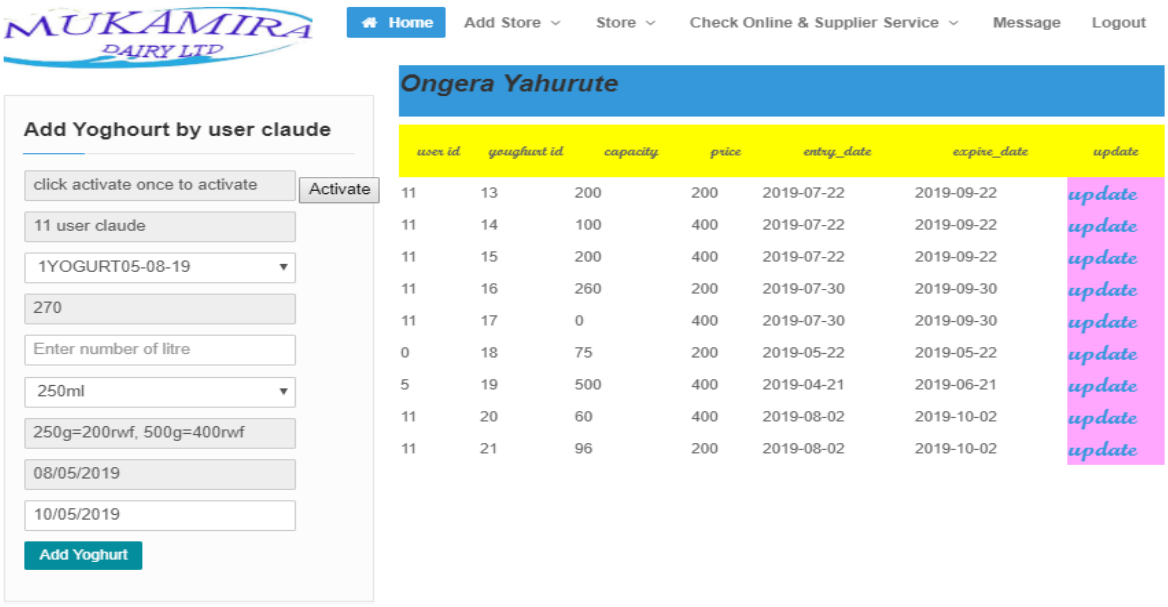


Figure 6: Activation form

5.1.5 Buying yoghurt Form

This form will help the client to buy yoghurt product

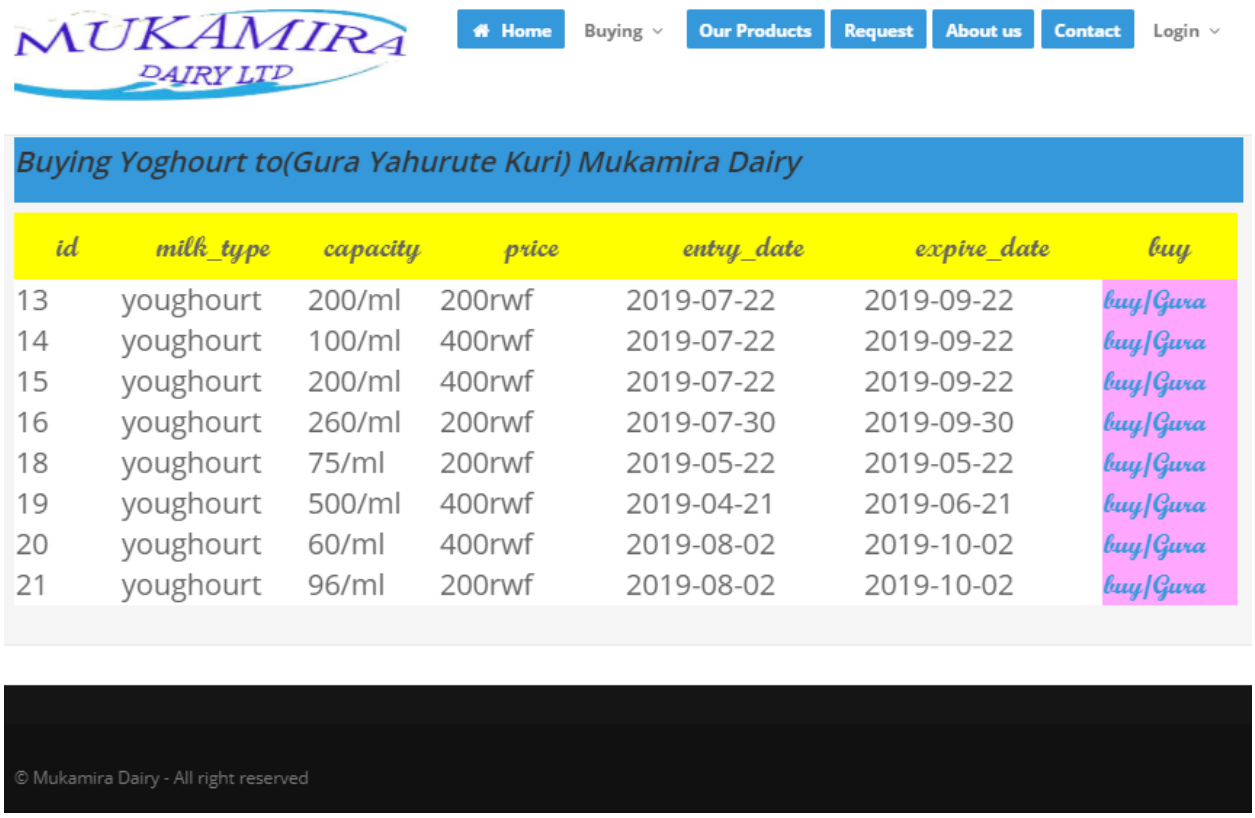


Figure 7: buying yoghurt form

5.1.6 Buyer Information Form

This form registers the information from clients

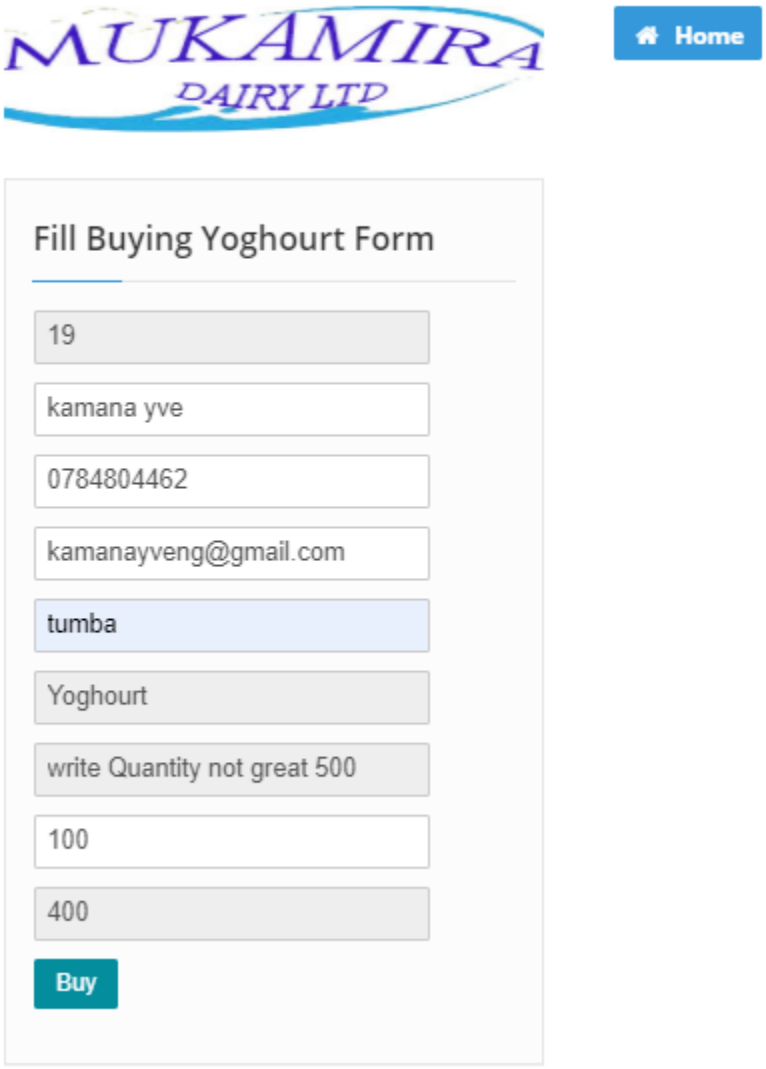


Figure 8: Buyer Information Form

5.1.7 Admin page

This form show manager simple report of Mukamira dairy

Figure 9: Admin page

5.1.8 Sold Report

Selling product report to manager of Mukamira dairy.

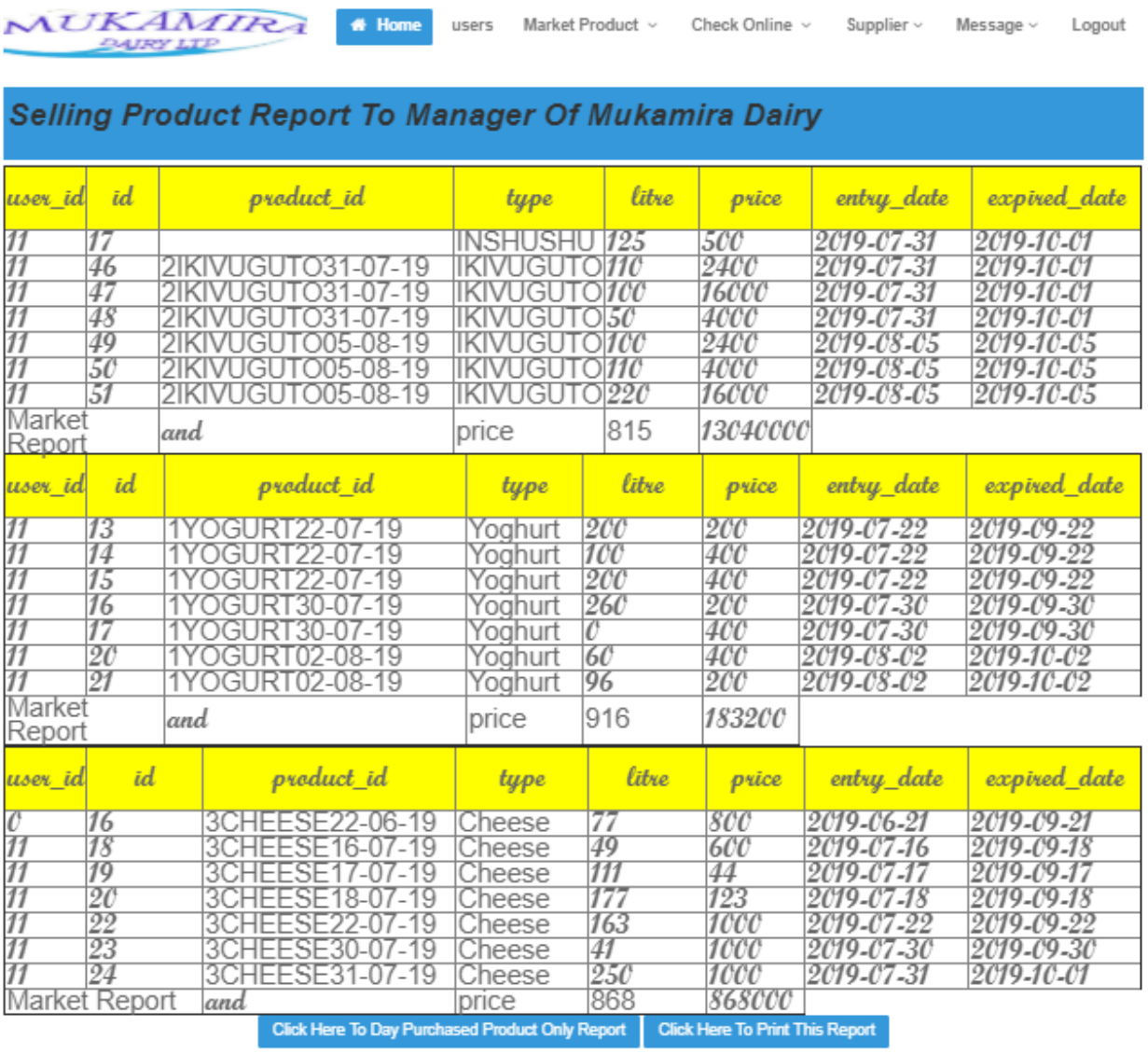


Figure 10: On market product report

5.1.9 Expired Date Products Report

This report shows all products which are out of date.

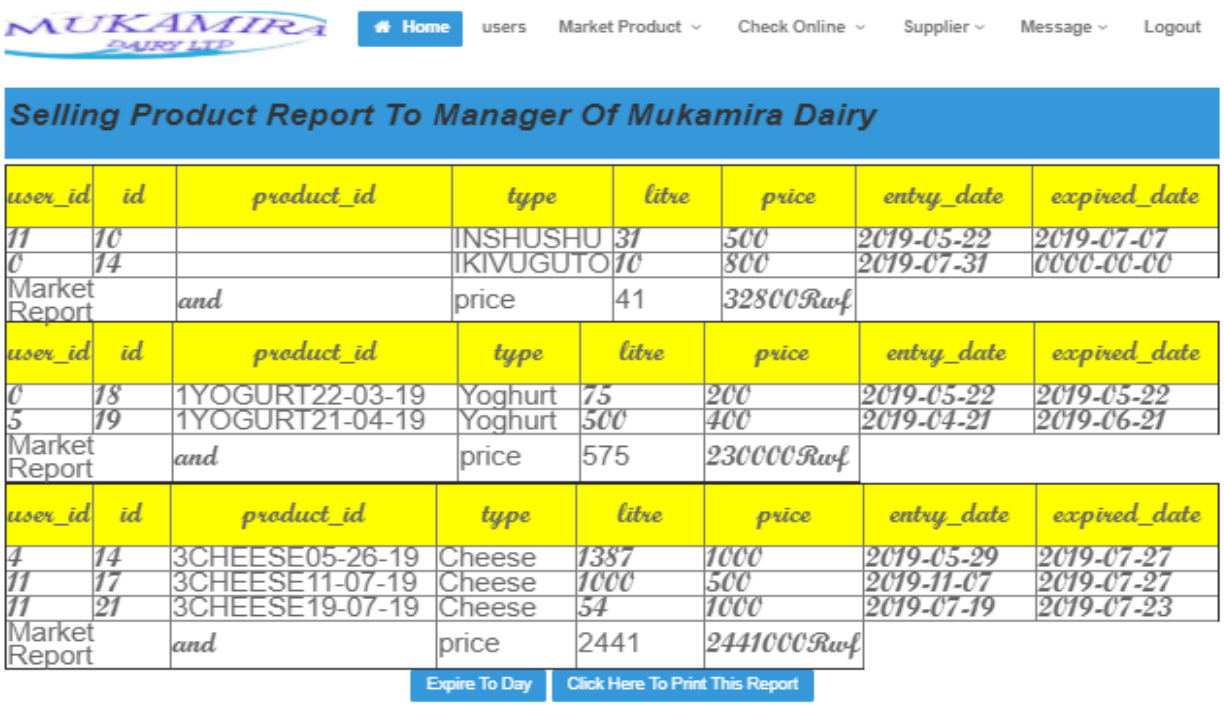


Figure 11: expired products report

5.1.10 Supplier Report

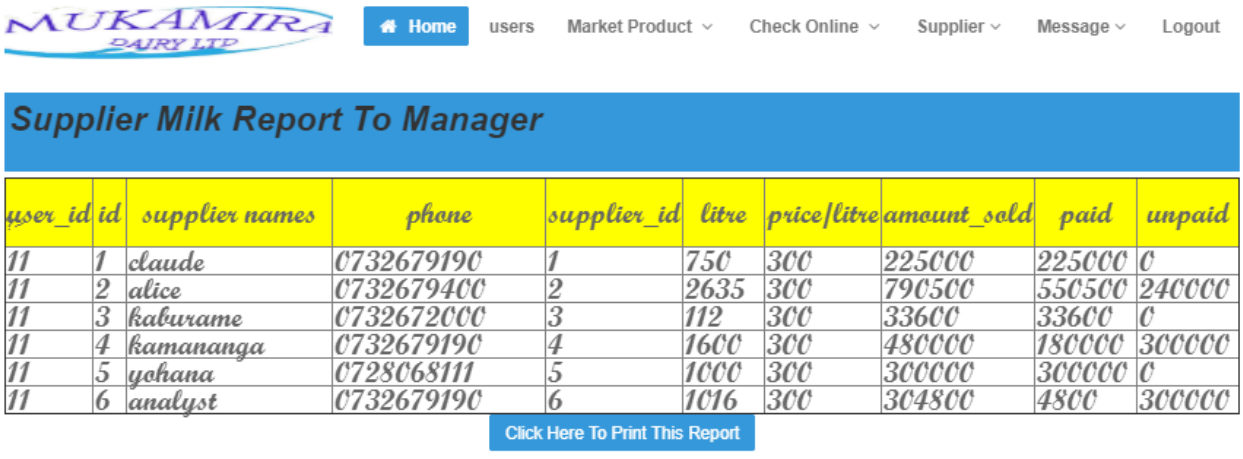


Figure 12: Supplier report

5.1.11 Bought Report

This report shows all bought products.

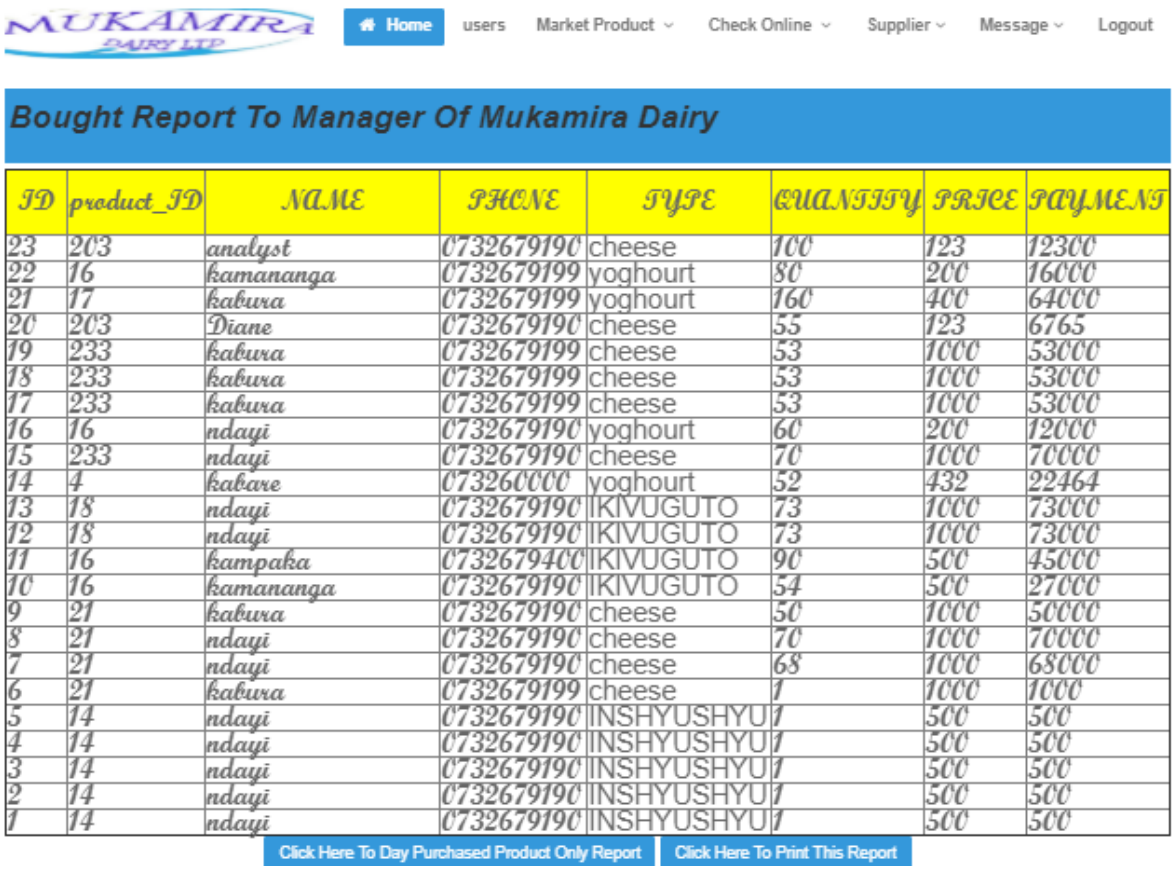


Figure 13: Bought report

CHAPTER VI: CONCLUSION AND RECOMMENDATION

6.1 Conclusion

technology is very important tool which contribute a great role in country ‘s development where the use of electronic devices for daily life activities perform well in all sectors, such as for saving information, managing communication, according to the service needs by society, in order to reduce tasks and increase of productivity.

Dairy Management System is web application which used in Dairy purpose, which help manager and users (milk collectors) to perform dairy services. Due to our aim of study we were able to develop web application that has capabilities of linking Mukamira dairy ltd, clients and farmers so they can exchange products in easily way, this is system also will help the manager of Mukamira dairy to get report automatically.

The main goal of this project was to design and implement web application called Dairy Management System. This web application has different task register new farmer, register new user, the most important of this web application is linking the farmer, client and dairy in terms of exchange products from milk.

This system’s applications will form and create opportunities that offer users to enter their records on forms, provided to save directly to the database storage system. Only the user and manager can make data entry and any details needed or information to be stored in the database. Dairy management system makes it easier to store data on a daily basis as it was too hard for them in the old system where they used hard paper which don’t have any kind of security, thus, this system will automatically store the data in the valid fields and make the whole data storage process easier and time-efficient.

6.2 Recommendations

This project has been successful achieved but we were lacking where to get more books to help us in our project, it was not completed in time as we had planned, so we would like to recommend IPRC TUMBA administration to provide a good and equipped library for students to help them during their final year projects.

We would like also to recommend MUKAMIRA DAIRY to use this system. Because is able for the safety of milk and help to take care of the prepared milk and other products from milk like cheese, yogurt and ikivuguto, we would also recommend MUKAMIRA DAIRY to buy API from havanao company(www.havanao .com) in order to use online payment where they can receive money from Mobile money ,Airtel money and Tigo cash .

The recommendation is addressed to the system users that they should be interested in the facilities of using this web application because it is very useful, effective and efficient.

Hence, I recommend also other Researchers to continue and adding any new things they can discover in order to improve this project using different languages for making easy their activities.

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APPENDIX

Questions we asked in interview

To supplier:

1. How do you sell milk?

2. In which way a Dairy know you have milk?

3. How do you transport the milk?

4. How do you get your money?

To Dairy manager:

1. How often do you record information to workers and suppliers?

2. What kind of information do you record and how do you process it?

3. How do you buy the milk and their transport in conditions?

4. In which way you the quantity of each products (ikivuguto, inshyushu, cheese)

5. In which way you know if the products are out of date?

6. How do you sell the products from milk?

7. What are main challenges do you face in your daily activities

8. How do you advertise the products?

To The Clients:

1. How do you know if the products are available?

2. How do you pay the products?

3. How do you buy the products from a dairy?